UNDERGRADUATE MENTORING IN ENVIRONMENTAL BIOLOGY (UMEB)

Program Announcement

DIRECTORATE FOR BIOLOGICAL SCIENCES

Division of Environmental Biology
Division of Integrative Biology and Neuroscience

Target Date for Submission: ***January 15 Annually***

NATIONAL SCIENCE FOUNDATION

PROGRAM ANNOUNCEMENT

UNDERGRADUATE MENTORING IN ENVIRONMENTAL BIOLOGY (UMEB)

TARGET DATE: January 15 Annually

INTRODUCTION

The National Science Foundation's (NSF) mandate to ensure the vitality of the nation's scientific and engineering enterprise requires a focus on the quality, distribution and effectiveness of the human-resource base in science and engineering, including full utilization of all potentially interested and qualified citizens. Because members of certain groups are underrepresented in the science and engineering workforce, the Foundation and its Directorate for Biological Sciences (BIO) support efforts directed toward increasing their numbers as full participants in the scientific mainstream. In keeping with such efforts, the Divisions of Environmental Biology (DEB) and Integrative Biology and Neuroscience (IBN) are soliciting proposals for **Undergraduate Mentoring in Environmental Biology (UMEB)**, an activity to enhance the opportunities for undergraduate students, particularly those from underrepresented groups, to participate in research in environmental biology. For the purposes of this announcement, these groups include persons with disabilities and members of those racial and ethnic groups underrepresented in science and engineering: Native Americans (American Indians and Alaskan Natives), Blacks (African Americans), Native Pacific Islanders (Polynesians or Micronesians), and Hispanics (Latinos).

Also for the purposes of this announcement, "environmental biology" is broadly defined to include areas of research funded by IBN Programs in Ecological and Evolutionary Physiology, Integrative Plant Biology, Integrative Animal Biology, and Animal Behavior, as well as areas of research funded by DEB Programs in Systematic Biology, Population Biology, Biotic Surveys and Inventories, Ecology, Ecosystem Studies, Long-Term Research in Environmental Biology, and Long-Term Ecological Research Sites. This activity is an extension of, and builds upon, NSF's Research Experiences for Undergraduates (REU) program (NSF 96-102).

A pilot UMEB program, targeted at a smaller range of research areas, was run previously. Information about these awards can be found at http://www.nsf.gov/bio.

PROGRAM OBJECTIVES

The intent of this activity is to provide support for talented students to gain research experience and an enriched educational environment in environmental biology. Proposed projects should include major emphasis on direct student participation in research during the academic year and summer, with individual students continuing in the program for more than one year. Projects should emphasize factors that encourage and enable members of underrepresented groups to enter and remain in environmental biology, as broadly defined above.

Undergraduate Mentoring in Environmental Biology (UMEB) is one of several NSF activities with similar objectives, including activities in the Division of Human Resource Development in the Directorate for Education and Human Resources (e.g., Human Resource Development for Science, Mathematics and Engineering Education and Research, NSF 98-19). The Directorate for Biological Sciences (BIO) also encourages the submission of Research Opportunity Award supplement requests (described in NSF 94-79) by Principal Investigators with current research awards who seek to bring a scientist from a predominantly undergraduate institution, including minority-serving institutions that are predominantly undergraduate, to work on a funded project.

BIO particularly encourages UMEB proposals involving collaboration between research universities and predominantly undergraduate institutions with significant minority enrollment and/or a tradition of training minority students. NSF's Collaboratives to Integrate Research and Education (CIRE) activity will sponsor two workshops in Fall of 1998 to facilitate building linkages between minority-serving institutions and NSF-funded facilities and centers. Attendance at one of these workshops may prove helpful for potential UMEB Principal Investigators seeking to build such institutional linkages in the area of environmental biology. Further information about the workshops may be obtained by sending a request by e-mail to cire@nsf.gov.

WHO MAY SUBMIT

The Undergraduate Mentoring in Environmental Biology (UMEB) activity will consider proposals from any institution that has at least three currently funded or recently expired (no earlier than January 15, 1997) multi-year research awards (excluding Small Grants for Exploratory Research, equipment, planning, travel, symposium, facilities, and training grants, supplements or fellowships) from the Division of Environmental Biology (DEB) and/or from the Ecological and Evolutionary Physiology, Integrative Plant Biology, Integrative Animal Biology, and/or Animal Behavior Programs in the Division of Integrative Biology and Neuroscience (IBN). Institutions submitting collaborative proposals must have, collectively, a total of at least three such awards.

Proposals may be submitted for support of undergraduates in any area of research typically funded by the BIO programs named above.

AWARDS

The Undergraduate Mentoring in Environmental Biology (UMEB) activity anticipates making three or four awards each year with a 4-year duration. Budget requests should not exceed $275,000 total costs for each project. Proposals received by January 15 will be considered for awards to start in September. BIO expects to repeat this competition for several years, contingent upon the availability of funds, a positive review of UMEB activities in preceding years, and the availability of high-quality proposals.

PROPOSAL FORMAT AND CONTENT

UMEB proposals must be submitted electronically via NSF's FastLane system. Prepare proposals in accordance with the guidelines provided in Chapter II of the current issuance of NSF's *Grant Proposal Guide (GPG)*. The *GPG* is available on the NSF Web site at http://www.nsf.gov/. Include in UMEB proposals the components listed in *GPG*, Chapter II, Section D, with the following additional considerations:

- **Cover Sheet (NSF Form 1207)**

On the FastLane Proposal Cover Sheet, click on the "Add Org. Unit" button. Select "DIRECT FOR BIOLOGICAL SCIENCES" and click "OK." Scroll down and select:

> "DIVISION OF ENVIRONMENTAL BIOLOGY" (DEB) if the proposed discipline is systematic biology, population biology, biotic surveys and inventories, ecology, or ecosystem studies;
>
> **Or**
>
> "DIV OF INTEGRATIVE BIOLOGY AND NEUROSCIE" (IBN) if the proposed discipline is ecological and evolutionary physiology, integrative plant biology, integrative animal biology, or animal behavior.

Click "OK" to designate DEB or IBN as the NSF organizational unit. (For administrative convenience, all UMEB proposals are initially assigned to the DEB or IBN division level, even though their content is appropriate for a specific discipline in DEB or IBN. If disciplines in both Divisions are included, please designate IBN first and then add DEB.)

In the box labeled "Program Announcement/Solicitation No." enter "NSF 98-157" with no additional characters.

Begin the title of the proposal with "UMEB: . . . ."

The first-listed Principal Investigator (PI) is designated as the primary PI and is responsible for coordinating the entire proposed project.

- **Project Description** (maximum 15 pages) should describe**:**

1. A theme that integrates the proposed research and educational activities. This theme may be integrative across a range of disciplines in environmental biology or may be tightly focused in one such discipline.

2. Specific activities focusing on the undergraduate research experience. Examples of such activities include common courses on conducting research, rotations through several research laboratories, field trips, mentoring by a faculty member or graduate student, weekly journal clubs, and poster presentations at local, regional, or national meetings.

3. Names of prospective mentors, with brief description of their current research projects (funded or unfunded) that are appropriate for undergraduate participation and relevant to the UMEB proposal. **Note: Report required information about Results from Prior NSF Support at the end of the Project Description.**

4. Evidence of institutional commitment to increasing participation of groups that are underrepresented in science.

5. Methods for communicating, coordinating, and managing activities within the project.

6. Proposed administrative infrastructure (e.g., graduate-student coordinator, logistical support from a work/study office, mechanisms for undergraduate advising or study-skills enhancement).

7. Potential linkages or partnerships among participating organizations (e.g., academic institutions, federal or state laboratories, private foundations), including logistical arrangements for coordination.

8. Efforts to recruit minority students to the program or campus, e.g., via links to high schools or community colleges with programs that encourage minority students to pursue careers in science or engineering.

9. Other support (federal or non-federal) for the UMEB project or for related activities.

10. Potential mechanisms for continuing the project activities beyond the NSF funding period.

11. Assessment techniques for evaluating the effectiveness of the program.

- **Results from Prior NSF Support**

For UMEB proposals, information required by NSF about Results from Prior NSF Support is limited to one page per PI and is not part of the 15-page limitation of the Project Description items listed above. Include the Results from Prior NSF Support at the end of the Project Description .PDF file.

- **Budget (NSF Form 1030)**

Include a detailed project budget and budget justification, as described in the current issuance of the *Grant Proposal Guide (GPG)*. In the budget justification (not to exceed 3 pages), explain and justify major cost items and any unusual situations/ inclusions. A general description of allowable budget items is included in *GPG*, Chapter II, Section D.7.

As a guide to budget development, student stipends for summer projects are expected to be at least $250 per week, with academic-year stipends comparable on a *pro rata* basis. Cost of student housing and travel to the site are appropriate budget items. All student costs should be entered at line F of Form 1030. It is expected that by far the greatest part of the budget will be allocated for student stipends. Examples of other allowable costs include travel, research supplies, part-time support for a graduate-student coordinator, field-station fees, and limited summer support for PIs. An **administrative allowance** (limited to 25% of the participant stipend support only) is allowed in lieu of indirect costs (enter at line I of Form 1030).

Special Note: A grantee may pay stipends as scholarships or wages as it determines appropriate. In either case, money received by individuals may be taxable income under the Internal Revenue Code of 1986 and may also be subject to state or local taxes. Grantees should provide students with copies of United States Internal Revenue Service Publication 4, "Student's Guide to Federal Income Tax." If stipends are paid as scholarships, grantees are also encouraged to provide copies of IRS Publication 520, "Scholarships and Fellowships," to participants. Questions regarding applicable Federal taxes should be directed to the IRS. Grantees should also provide participants with information on any applicable state or local taxes.

- **BIO Proposal Classification Form (PCF)**

Complete the BIO PCF, available on the NSF FastLane system. The PCF is an on-line coding system that allows the Principal Investigator to characterize his/her project when submitting proposals to the Directorate for Biological Sciences. Once a PI begins preparation of his/her proposal in the NSF FastLane system and selects a division, cluster, or program within the Directorate for Biological Sciences as the first or only organizational unit to review the proposal, the PCF will be generated and available through the form-selector screen. Additional information about the process is available in FastLane at http://www.fastlane.nsf.gov/a1/BioInstr.htm.

PROPOSAL SUBMISSION

The **target date** for submitting UMEB proposals is **January 15**. Proposals received by the target date will be reviewed by the panel that meets in March following the January target date. Proposals that do not allow sufficient time for review by this panel may be returned without review. Proposals for this solicitation must be submitted electronically via NSF FastLane.

In order to use NSF FastLane to prepare and submit a proposal, you must have the following software: Netscape Navigator 3.0 or above, or Microsoft Internet Explorer 4.01 or above; Adobe Acrobat Reader 3.0 or above for viewing PDF files; and Adobe Acrobat 3.X or Aladdin Ghostscript 5.10 or above for converting files to PDF.

To use FastLane to prepare the proposal, your institution needs to be a registered FastLane institution. A list of registered institutions and the FastLane registration form are located on the FastLane Home Page. To register an organization, authorized organizational representatives must complete the registration form. Once an organization is registered, PINs for individual staff are available from the organization's sponsored projects office.

To access FastLane, go to the NSF Web site at http://www.nsf.gov, then select "FastLane," or go directly to the FastLane home page at http://www.fastlane.nsf.gov/. Please see "Instructions for Preparing and Submitting a Proposal to the NSF Directorate for Biological Sciences" located at http://www.fastlane.nsf.gov/a1/BioInstr.htm. Additionally, read the "PI Tipsheet for Proposal Preparation" and the "Frequently Asked Questions about FastLane Proposal Preparation," accessible at https://www.fastlane.nsf.gov/a1/A1Prep.htm.

Mail the following materials directly to Undergraduate Mentoring in Environmental Biology (UMEB) :

- a paper copy of the cover sheet, including the certification page (page 2 of 2) signed by the PI and an institutional representative;

- the BIO classification form; and

- applicable certifications involving research with vertebrate animals or endangered species.

The mailed materials should be received by January 22. Send materials to the UMEB central address:

UMEB – NSF 98-157
Division of Environmental Biology
National Science Foundation
4201 Wilson Boulevard, Room 635
Arlington, VA 22230

Do not mail copies of the proposal. NSF will make the appropriate number of copies of the proposal.

IMPORTANT NOTE: For technical assistance with FastLane, please send an e-mail message to biofl@nsf.gov. If you have inquiries regarding other aspects of proposal preparation or submission, please contact one of the Program Directors listed below well before the target date for submission.

PROPOSAL REVIEW

Proposals are reviewed by a multidisciplinary panel and by mail reviewers using the merit-review criteria described in the current issuance of the *Grant Proposal Guide (GPG)*, Chapter III. The following additional criteria receive particular emphasis:

1. Impact upon participating students, particularly upon students from groups typically underrepresented in science.

2. Cohesiveness of the educational and research components within the project theme.

3. Extent to which the project builds partnerships and networks that contribute to program goals.

4. Adequacy of plans for project management, monitoring, evaluation, and dissemination.

5. Extent to which the project enriches the research environment in environmental biology at the participating institution(s).

6. Potential to sustain and institutionalize project activities beyond the NSF grant period.

7. Cost-effectiveness of the project.

8. Institutional commitment to UMEB goals, which can include efforts to increase participation of underrepresented groups.

Award decisions may also consider the distribution of awards by subdiscipline (i.e., systematics, population biology, biotic surveys and inventories, ecology, ecosystems, ecological and evolutionary physiology, integrative plant biology, integrative animal biology, and animal behavior).

GRANT ADMINISTRATION

Grants awarded as a result of this announcement are administered in accordance with the terms and conditions of NSF GC-1, "Grant General Conditions," or FDP-III, "Federal Demonstration Project General Terms and Conditions," depending on the grantee organization. Copies of these documents are available at no cost from the NSF Clearinghouse, P.O. Box 218, Jessup, Maryland 20794-0218, telephone (301) 947-2722, or via e-mail to pubs@nsf.gov. More comprehensive information is contained in the NSF *Grant Policy Manual* (NSF 95-26), available on the NSF OnLine Document System located at http://www.nsf.gov/, or for sale through the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

Annual and final project reports must be submitted via FastLane (see *Grant Proposal Guide*, Section VII.G). In addition to providing information for NSF staff review and monitoring of the progress of individual UMEB projects, these reports will be used in evaluation and assessment of BIO's UMEB activity. Supplementary information for this purpose may be requested from time to time.

INQUIRIES

Direct questions about the Undergraduate Mentoring in Environmental Biology (UMEB) activity to the following Program Directors:

Thomas M. Frost, Ecology/DEB,
(703) 306-1479 x 6453, tfrost@nsf.gov

Fred Stollnitz, IBN Cross-Directorate Activities,
(703) 306-1413, fstollni@nsf.gov

GENERAL INFORMATION

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Grantees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers, and educators. The Foundation strongly encourages women, minorities, and persons with disabilities to

compete fully in its programs. In accordance with federal statutes, regulations, and NSF policies, no person on grounds of race, color, age, sex, national origin, or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF. Some programs may have special requirements that limit eligibility.

Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the program announcement or contact the program coordinator at (703) 306-1636.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation regarding NSF programs, employment, or general information. TDD may be accessed at (703) 306-0090; FIRS at 1-800-877-8339.

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the review process; to applicant institutions/grantees to provide or obtain data regarding the proposal-review process, award decisions, or the administration of awards; to government contractors, experts, volunteers, and researchers and educators as necessary to complete assigned work; to other government agencies needing information as part of the review process or in order to coordinate programs; and to another Federal agency, court or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 63 *Federal Register* 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 *Federal Register* 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Reports Clearance Officer; Information Dissemination Branch, DAS; National Science Foundation; Arlington, VA 22230.

The program described in this announcement is in the category 47.074 (BIO) of the Catalog of Federal Domestic Assistance.

YEAR 2000 REMINDER

In accordance with Important Notice No. 120 dated June 27, 1997, Subject: Year 2000 Computer Problem, NSF awardees are reminded of their responsibility to take appropriate actions to ensure that the NSF activity being supported is not adversely affected by the Year 2000 problem. Potentially affected items include computer systems, databases, and equipment. The National Science Foundation should be notified if an awardee concludes that the Year 2000 will have a significant impact on its ability to carry out an NSF-funded activity. Information concerning Year 2000 activities can be found on the NSF Web site at http://www.nsf.gov/oirm/y2k/start.htm.

OMB# 3145-0058
P.T. 34
K.W. 1002000, 1002010, 1002011, 1002013, 1002016, 1002034, 1002039, 1002044, 1002047, 1002062, 1002146, 1007001, 1215015

NSF 98-157 (Replaces NSF 93-38)
Electronic Publication Only